

## **JET Meeting Minutes**

May 20, 2008

### **I. Participants**

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### **Action Items**

1. Joe Mambretti will investigate NANOG to determine if they have relevant guidance for network policies.
2. If people want to request Internet2 Scinet circuits please contact Chris Robb <[chrobb@internet2.edu](mailto:chrobb@internet2.edu)> or Matt Zekauskas <[matt@internet2.edu](mailto:matt@internet2.edu)>.
3. If you are interested in NLR support for SC08 please contact: [ess@nlr.net](mailto:ess@nlr.net)

4. Wendy Huntoon will provide information to the JET on the plans for DarkStrand use of the NLR infrastructure. NLR will provide an update at the Joint Techs meeting.
5. If you are interested in StarLight support for SC08, please contact the StarLight 710 engineers at [710engineers@startup.net](mailto:710engineers@startup.net).
6. If you are interested in PNWGP support for SC08, please contact Jan Eveleth: [<Eveleth@cac.washington.edu>](mailto:Eveleth@cac.washington.edu)
7. Please review the developing draft ARIN policy for IPv6 transition at: [www.arin.net/media](http://www.arin.net/media)
8. The JET should consider developing a white paper on their concerns for the transition from IPv4 to IPv6.
9. Grant Miller will request that John Curran address LSN on the IPv4 to IPv6 transition

### **Proceedings**

This meeting of the JET was coordinated by Paul Love of the NCO.

### **Security on IRNC Networks**

The NSF IRNC networks provide connectivity internationally. What policies should be implemented for the IRNC networks for connectivity and security for these networks? What are best practices for providing security for the IRNC networks? The issue should continue to be discussed in the JET. The JET can address technical and engineering issues, such as best practices, but policy issues are, generally, outside the JET purview.

AI: Joe Mambretti will investigate NANOG to determine if they have relevant guidance for network policies.

### **Network and Exchange Point Roundtable**

#### **ESnet**

ESnet is preparing for the rollout of their circuit-based network to support research applications. A 10 G link will be installed across the northern tier of the country to complement the existing 10G Layer 3 link. The northern route will then be 20 G and the southern route will be 10G. There will be three north/south connectors. It is estimated that half this installation will be completed by the end of the fiscal year with the remainder being completed at the beginning of the next calendar year. An ESnet/NOAA dark fiber link between Princeton (PPPL & GFDL) and Philadelphia is expected to be operational this Fall. Initially it will support a 10G layer 3 link to the ESnet router in McLean. ESnet will provide two 10G links to the SC08 floor, one for shared layer 3 traffic, the other for SDN use. Demonstrations supported by ESnet will include the LHC and industry collaboration for advanced demonstrations.

## **AmPath**

AmPath continues to provide South American connectivity via the NSF IRNC network links. The CLARA community is no longer peering on the Pacific coast route due to reduced traffic while retaining their peering in Miami. This resulted from an additional connection between Panama and Miami. In the 2009 time frame, traffic on the South American links is expected to increase enough that the PacificWave west coast peering will be restored. Recently CLARA peering on the east coast has been fragile due to changes in topology but those changes are abating. CUDI continues to peer on the West Coast as well as via a connection into El Paso. AmPath added a vLAN via AWave for CLARA peering with Canarie, Internet2 and NLR.

**DREN:** No report

## **Internet2**

The Internet2 optical upgrade in Charlottesville will be completed May 26. The Infinera eastern span was upgraded. The Kansas to Houston leg received a code upgrade. Internet2 will be supporting SCinet as a connecting site. Internet2 is currently gathering requirements for SC08 network support for Layer 3 and DCN or static circuits.

AI: If people want to request Internet2 SCiNet circuits please contact Chris Robb <chrobb@internet2.edu> or Matt Zekauskas <matt@internet2.edu>.

## **NIH**

NIH is considering increasing its bandwidth to the MAX to 10G support the 1000 genome project.

## **NISN**

NISN is planning to support the OMB IPv6 mandate at the end of June. V6 is enabled on their external network to support peering. NISN is implementing jumbo frames throughout their backbone network. A high-speed link is being implemented between Ames Research Center and Goddard Space Flight Center for high performance computer support.

## **National LambdaRail (NLR)**

NLR will provide 20 G Framenet to SC08 plus 20 G packetnet. They are using the Sherpa dynamic vLAN service for one of the two Framenet lambdas providing up to 10G schedulable service. They will not be supporting Layer 1 circuits to SC this year. NLR chose Cisco for upgrades to their northern tier service. Upgrades are planned for completion in 3-6 months. A June meeting in Denver will establish a timeline for the upgrade and potential disruptions to service due to the upgrades.

NLR announced a partnership with Darkstrand whereby DarkStrand will purchase 50% of the upgraded NLR environment for delivery of waves beginning in January 2009. They will use the NLR infrastructure to tie together DarkStrand users.

AI: If you are interested in NLR support for SC08 please contact [ess@nlr.net](mailto:ess@nlr.net)

AI: Wendy Huntoon will provide information to the JET on the plans for Darkstrand's use of the NLR infrastructure. NLR will provide an update at the Joint Techs meeting.

**NOAA:** No report

**NREN:** No report

**AWave**

International transit is being provided by AWave. An eVLBI demonstration is being supported by AWave between Arecibo, Puerto Rico, and TERENA. AWave is using two IRNC links to South America and Chicago to transit traffic between South America and Europe. AWave has enabled peering between Canarie and CLARA.

**TransPac**

TransPac is initiating a connection to Pakistan later this month.

**NGIX-East**

NGIX-East has installed Fujitsu equipment between Baltimore and McLean. They are replacing their Luxan gear over the next month. They have a 10G wave to Ashburn. They are considering a move of NGIX-East to Ashburn.

**MANLAN**

MANLAN is upgrading its HDXc service to enable dynamic user control. The two-stage upgrades to the Nortel equipment are expected to be in-place by the end of the second quarter. MANLAN is adding connectors.

**StarLight**

StarLight is supporting the connection of Aricebo to the TERENA conference. They also have a vLAN in place from Barcelona to Chicago via NetherLight for digital video demonstrations with Internet2.

AI: If you are interested in StarLight support for SC08, please contact the StarLight 710 engineers at [710engineers@startap.net](mailto:710engineers@startap.net).

**Ames**

They are investigating geothermal cooling.

**Pacific NorthWest GigaPoP (PNWGP)**

The PNWGP is working with Internet2 on collocation. They are implementing upgrades to power in California to support additional line cards.

AI: If you are interested in PNWGP support for SC08, please contact Jan Eveleth at: [Eveleth@cac.washington.edu](mailto:Eveleth@cac.washington.edu)

**Meetings of interest**

May 29-30 NOAA sponsored Network Performance Workshop, Miami, Florida  
July 20-24 Joint Techs and ESCC, Lincoln, Nebraska  
August, 2<sup>nd</sup> week: DREN Networkers Conference, San Diego, California  
August, 2<sup>nd</sup> week: APAN Conference, New Zealand  
August 24, NISN User's Conference, Chicago, Illinois  
September 28-30 Networking Research Challenges Workshop, Seattle, Washington  
October 1-2 GLIF Meeting, Seattle, Washington  
October 13-16, Internet2 Member Meeting, New Orleans, Louisiana  
December, 1<sup>st</sup> week: The Interworking Conference is being held in Miami Beach. Telcos and academic institutions will attend from the US, Latin American and Asian-Pacific communities

### **Trusted Internet Connections (TICs)**

A Networkx TIC Seminar was held one week ago involving GSA and vendors. Karen Evans held a TIC panel during the meeting. Approximately 4000 Federal Internet connections are now planned to be reduced to 230. A new policy on DNSSEC is being formulated. It will be announced as a new policy. GSA will offer GSA schedule TIC services beginning November 19, 2008. Current Einstein capabilities provide up to 10 Gbps netflow monitoring, OC 192 capability. Researchers and developers are working to increase this capacity. Under Phase 1 (current) in-band flows are used to communicate information back to DHS. Under Phase 2, out of band dedicated service will be used to carry the information. Qwest is considering how to offer TIC service economically and how to implement firewalls.

### **ARIN: IPv4 Depletion and Migration to IPv6**

70.3% of IPv4 /8s have now been allocated. Only 16% remain for allocation or 41 /8s. Current consumption of /8s is over 10 /8s per year so remaining address space is limited. Migration to IPv6 numbering resources is necessary for building out major new networks and addition of new customers by ISPs. Creative alternatives may enable near-term dependence on IPv4 numbering. In the near future organizations will need to use IPv6 to try to reach users via email and Web servers. ISP providers will, shortly, not be able to maintain the hierarchical assignment model of IPv4. . Reallocation of subspaces of /8s will drastically increase the size of routing tables. Equipment manufacturers will have to support IPv6 very quickly. Exhaustion of ISP address space may prompt ISPs to terminate network neutrality addresses.

ARIN has information online at: [www.getipv6.info](http://www.getipv6.info)

For the full briefing please see the JET Website at:

<http://nitrd.gov/subcommittee/lsn/jet/index.html>

AI: Please review the developing draft ARIN policy for IPv6 transition at:

[www.arin.net/media](http://www.arin.net/media)

Discussion among the JET members suggested the ARIN briefing be made available on UTube

AI: The JET should consider developing a white paper on their concerns for the transition from IPv4 to IPv6.

AI: Grant Miller will request that John Curran address LSN on the IPv4 to IPv6 transition.

### **Networking Research Challenges Workshop**

The JET and LSN are holding an invitation-only workshop on Networking Research Challenges September 28-30 in Seattle, Washington just before the GLIF meeting of October 1-2 in Seattle. The workshop will build on the Federal Plan for Advanced Networking Research and Development, expected to be published May 31, 2008 and the Comprehensive National Cybersecurity Initiative (CNCI) to identify priorities for advanced networking research over the next decade. The workshop will have four tracks in:

- Heterogeneous networking (including dynamic mobile wireless)
- Federation of networks across policy domains
- Security
- New technologies (including large-scale data transfers)

### **Future JET Meetings**

June 17, 11:00-2:00, NSF, Room 1150

July 21, 8:15PM CDT, Embassy Suites Hotel, Lincoln, Nebraska, concurrent with Joint Techs

August 19, 11:00-2:00, NSF, Room 1150